

Amendments to the specification

Please replace the paragraph beginning at page 1, line 20, with the following rewritten paragraph:

A2 -- FIG. 1a-b (background art) depict ~~to two~~ variations of traditional gratings. As can be seen, the shape of the groove can vary. FIG. 1a shows square steps and FIG. 1b shows blazed triangles, but other shapes are also possible, e.g., sinusoidal shaped grooves, and the physics is essentially the same. --

Please replace the paragraph beginning at page 8, line 7, with the following rewritten paragraph:

A3 -- FIG. 20 is a perspective view of a three-dimensional (3D) generic grating. --

Please replace the paragraph beginning at page 22, line 8, with the following rewritten paragraph:

A4 -- FIG. 20 is a perspective view of a three-dimensional (3D) grating 880. In the grating 880 a background material (not shown, but of a material having refractive index n_1) contains non symmetrical cubic cells 882 (of a material having refractive index n_2). An incoming light beam including three wavelengths $\lambda_1, \lambda_2, \lambda_3$, stylistically represented as first portions 884, second portions 886, and third portions 888, is incident to the cells 882 on their surfaces. With respect to each of the three different incident surfaces and opposed surface sets, the cells 882 each behave like a "scatterer" according to Eq. 1 and 2, above. --

Please replace the paragraph beginning at page 23, line 11, with the following rewritten paragraph:

A5 -- In multi-dimensional contexts such a gradient need not extend merely in a single-dimensional, lengthwise manner, like the light beam 510 progressing through the liner grating 500 in FIG. 11. For example, if the index of refraction were varied from, say, the top-left corner

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to the bottom-right corner in the linear grating 850 in FIG. 19, the first portions ~~868-866~~ (λ_1) and the second portions 868 (λ_2) would both contain broadened wavelength response (i.e., each be "chirped"). Similarly, if the index of refraction were varied from corner to corner in the cubical grating 880 of FIG. 20, the three respective portions 884, 886, 888 ($\lambda_1, \lambda_2, \lambda_3$) there would each be wavelength broadened. --

Please replace the paragraph beginning at page 24, line 18, with the following rewritten paragraph:

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-- As shown in FIG. 14, 18, and 20, the cells can have one, two, or even three different thickness, to effect a corresponding number of light wavelengths differently. Furthermore, in sophisticated embodiments these respective cell thickness can intentionally be different. To help appreciate this further, reconsider the above discussion about varying cell index of refraction. Cell to cell variation can be employed. Finite sets or ranges of thicknesses for the different cells can be used; the cells so constructed can be placed in layers, another ordering, or randomly; and the proportions between the different cells can ~~cells be~~ equal or otherwise, to purposely work more or less strongly with particular light wavelengths. --

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